



PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference K 3155	FOR FURTHER ACTION see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. PCT/EP 03/13413	International filing date (day/month/year) 28/11/2003	(Earliest) Priority Date (day/month/year) 29/11/2002
Applicant DEUTSCHES KREBSFORSCHUNGSZENTRUM STIFTUNG DES ...		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 4 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

- a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing :

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☐ **Certain claims were found unsearchable** (See Box I).

3. ☐ **Unity of invention is lacking** (see Box II).

4. With regard to the title,

☐ the text is approved as submitted by the applicant.

☒ the text has been established by this Authority to read as follows:

PEPTIDE CONJUGATE USEFUL FOR CELL NUCLEUS MOLECULAR IMAGING AND TUMOR THERAPY

5. With regard to the **abstract**,

☐ the text is approved as submitted by the applicant.

☒ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No.

☐ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

☒ None of the figures.

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Box III TEXT OF THE ABSTRACT (Continuation of item 5 of the first sheet)

Described is a conjugate comprising (a) an amphiphilic transport peptide of human origin as a transmembrane module (TPU), (b) a nuclear localization sequence (NLS) and (c) a signalling and/or drug carrying module (SM), preferably comprising Gd, Ga, Fe, Mn, I and/or F as (diagnostic) image creating compound. Said conjugate is useful for diagnostic purposes, e.g., for cell tracking by MRI, as a contrast agent (e.g., replacing a "biopsy clip") for MRI, or for determining the activity of DNA repair enzymes by MRI. Said conjugate is also useful for therapy, e.g., for chemotherapy or intranuclear Gadolinium Neutron Capture Therapy (GNCT). The transmembrane module (TPU) is selected among peptides of human origin, whose amino acid sequences are similar to the sequence of the antennapedia fragment RQIKIWFQNRRMKWKK. In a specific embodiment, TPU is derived from the human homeobox protein HOX-B1. The nuclear localization sequence (NLS) is derived from the simian virus 40-T antigen or from a transcription factor.

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A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C07K14/47 A61K49/14 A61K47/48 A61P35/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C07K A61K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ, CHEM ABS Data, Sequence Search

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	WO 95/34295 A (UNIV VANDERBILT) 21 December 1995 (1995-12-21) * page 6, second paragraph; page 11, first paragraph; claims 11-15 *	1-3, 5-16
Y	HEIJNE VON G ET AL: "SPECIES-SPECIFIC VARIATION IN SIGNAL PEPTIDE DESIGN IMPLICATIONS FOR PROTEIN SECRETION IN FOREIGN HOSTS" FEBS LETTERS, ELSEVIER SCIENCE PUBLISHERS, AMSTERDAM, NL, vol. 244, no. 2, February 1989 (1989-02), pages 439-446, XP001149430 ISSN: 0014-5793 * page 439, left-hand column, second paragraph; page 439, right-hand column, last paragraph *	1-3, 5-16

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- "&" document member of the same patent family

Date of the actual completion of the international search

10 March 2004

Date of mailing of the international search report

18/11/2004

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Fausti, S

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	<p>BRAUN K ET AL: "A biological transporter for the delivery of peptide nucleic acids (PNAs) to the nuclear compartment of living cells"</p> <p>JOURNAL OF MOLECULAR BIOLOGY, LONDON, GB, vol. 318, no. 2, 2002, pages 237-243, XP002238940</p> <p>ISSN: 0022-2836</p> <p>* abstract; table 1; page 242, left-hand columns, lines 5-9 *</p> <p>-----</p>	5-10
Y	<p>BHORADE RAJEEV ET AL: "Macrocyclic chelators with paramagnetic cations are internalized into mammalian cells via a HIV-tat derived membrane translocation peptide."</p> <p>BIOCONJUGATE CHEMISTRY, vol. 11, no. 3, May 2000 (2000-05), pages 301-305, XP002242549</p> <p>ISSN: 1043-1802</p> <p>* abstract; page 301, right-hand column, lines 5-8; page 302, left-hand column, lines 1-4; figure 3 *</p> <p>-----</p>	2,12-14

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Information on patent family members

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Patent document cited in search report		Publication date		Patent family member(s)		Publication date
WO 9534295	A	21-12-1995	US	5807746 A		15-09-1998
			AU	2828095 A		05-01-1996
			WO	9534295 A1		21-12-1995
			US	6043339 A		28-03-2000
			US	6495518 B1		17-12-2002
